

not normally be found. However, there exist nearby glacial strata of Permian age in which occur numerous boulders originally dropped into a sea from floating icebergs. It is from these boulder beds that the aborigines probably obtained their supply.

In this locality, the eastern margin of the sandplain is bordered by low cliffs about thirty feet high, and a number of permanent springs issue from the slopes. In winter this water finds its way to the lower ground where an absence of good drainage results in very wet conditions.

This plentiful supply of ground-water which owes its origin to underground drainage from the sandplain, has been utilised by both the white man and the aborigine. The former has tapped the supply by means of a Government windmill located near the site of the present discovery, while the presence of artefacts shows that, in the past, Yandanooka Springs must have been of some importance as a native watering-place.

The restricted size of the collecting area with its relatively small numbers of artefacts, indicates the probable transitory nature of aboriginal habitation at this site.

OBITUARY

O. H. SARGENT

Oswald Hewlett Sargent, Western Australian botanist, was born in England, on December 5, 1880, at Selly Oak, near Birmingham. At the age of six years he with his younger brothers and sisters were brought to Australia by his parents. During the long voyage to Australia, in the steamship *Elderslie*, Oswald was nearly washed overboard, an incident that remained vividly in his memory to the end of his long life.

After a short stay in Perth the family moved to York where the father, Obeithio Sargent, established a pharmacy. There the children received their education at the State School. After leaving school Oswald, the eldest, studied in preparation for his destined career as a chemist. He was coached for the Pharmacy Entrance examination by Mr. Walker, a retired school teacher and a very able man. Apart from this and the very real assistance of his father, Oswald gained his education by persistent reading and thought. He was extremely interested in botany, collecting a large number of texts, and applying his knowledge of classical languages and chemistry to further this study in every detail. Later when he found that many interesting botanical monographs are written in German he succeeded in teaching himself that language also. In 1902 he passed the final examinations of the Pharmacy Board, winning the first Webster Memorial Gold Medal to be awarded. His examiner, Alexander Purdie, Director of Technical Education in W.A., Lecturer in Chemistry at the Perth Technical School, and a fine botanist, was much impressed with the ability of the young examinee. He found himself referring to texts to verify some of Sargent's statements in the botanical section of his examination. Thereafter they became firm friends and Purdie's death in 1905

left his protege much bereaved. When his father died in 1916, Oswald took over the York Pharmacy. He spent several periods in Bruce Rock relieving the local chemist, interludes which he much valued. In 1925 he married a fellow chemist and settled in Perth where he conducted a pharmacy, until finally returning to York in 1934, where he and his wife continued in business. On his death on March 4, 1952 he left a widow and one son.

In these bare facts concerning his material progress there is only a hint of his absorbing interest in botany. Throughout the centuries, chemists (or herbalists) have been botanists. The old cures prescribed the use of certain plants and the first known



O. H. Sargent, 1925.

scientific descriptions of plants were made by chemists. Botany remains a prescribed subject for pharmaceutical examinations. It would therefore be easy to trace a fanciful development in O. H. Sargent from chemist to botanist, but the foundations for his love of wildflowers were laid before he studied chemistry.

From earliest childhood his great joy was to wander through the bush studying everything that came his way, from the tripping of the trigger-plants' columns, to the sensitive labella of certain orchids, from the manner in which the Christmas Tree grew, to the way in which birds sipped nectar from different flowers.

York in those days was a botanical paradise in which native flora and fauna abounded. Though slightly built, Sargent was capable of very long marches, declaring that a collector travelling on horseback or in a sulky could miss many a treasure. This leaning towards a study of natural history may have been a family characteristic. A cousin, the late Dr. F. W. Edwards, F.R.S., was deputy keeper of the Department of Entomology at the British Museum (Natural History) and this link may have been useful on the several occasions that Sargent sent material to be compared with original collections held at that institution.

During the early years of the century Western Australia was visited by many eminent botanists; and several keen workers were resident in the State. In such company Sargent took his place naturally, earning a reputation as a sound botanist that persisted to his later years.

The meeting of the British Association for the Advancement of Science held in Perth in 1914 was a highlight for local naturalists. Sargent joined the botanical group and after the meetings they toured various parts of the State in search of interesting plants. It was then that his experience in long bush walks stood him in good stead, and many a time he found himself sole companion of a great botanist who, like himself, insisted that a true collector must go on foot. These overseas visitors encouraged him to make additional studies of the many unusual plants in this part of the world.

One of his first published papers, "The Pollination of *Caladenia barbarossae*" (1907), gave him more satisfaction than any of his later writings. Orchids remained his lifelong interest and the majority of his publications deal with this family. Yet a student after reading a collection of work from Sargent's pen is struck by the eager interest and perception that he brought to the study of all wildflowers. He excelled in biological studies and made very detailed life histories of many plants, with almost poetical pen pictures of their appearance and habitat. The bird and insect associations were noted and many hours were spent in watching and recording results. Mr. C. A. Gardner recalls that once at Pinjarra he sat for about two hours in one spot looking for the flowers of *Drakaea jeanensis*, which could be seen only when the sun hit them at a certain angle in the long grass. Such patience is second nature only to true observers.

Those earlier years were the most fruitful. He wrote many popular articles for the newspapers. He described several new species of wildflowers. His notebooks overflowed with records and observations. Those which he published commanded the attention of botanists at home and abroad. Those which he stored away were to have occupied the idle days of his retirement when he no longer would be able to walk so far afield.

He had a strong interest in systematic botany and intended writing a Flora of Western Australia, employing a somewhat unusual but convenient basis, such as divisions of plants into herbs, shrubs and trees, size of leaves etc., but this work was never done.

To this end he had amassed a fairly large herbarium which he gave into the charge of the Western Australian Museum about 1928. The collection was not mounted and must have deteriorated considerably. Sargent himself perhaps felt unequal to the task of reducing it to order and seems never to have consulted it after it left his hands.

His life in Perth had given him the desired contact with fellow naturalists. He joined the Western Australian Naturalists' Club in December 1924 and was soon active in its affairs, becoming vice-president in October 1925 and was president for the following terms: 1928-1929 and 1931-1932.

Sargent, however, had a singularly independent attitude of mind that was not always acceptable to fellow botanists. Later his obstinate backing of an unworthy associate lost him the sympathy of many club members. His return to York in 1934 marked his dissociation from many of his former activities and failed to reunite him properly with the well-head of his inspiration, the bush-land itself. He had lost his old fervour and York was no longer the happy hunting ground of his youth.

He turned instead to studying the propagation of wildflowers, an activity that strongly appealed to one who prided himself on his "green fingers," and who felt so keenly the loss of wildflowers caused by the inroads of civilisation. The destruction of native plants grieved him and to the end he condemned Progress, Thoughtlessness and Wanton Vandalism, three factors that so rapidly denude any district of its native treasures.

Sargent experimented much with the cultivation of native orchids. They were transplanted to his greenhouse with some success, but his ambition was to grow them from seed. He worked on this problem under a grant from the Council for Scientific and Industrial Research, but did not succeed.

Although the latter part of his life failed to fulfil the bright promise of his youth, Sargent's achievements as they stand today are considerable. His studies laid the foundations for future research in several fields. Those plants that commemorate his name are a fitting memorial to one who spent a lifetime studying them.

The following species commemorate Sargent's name:—*Pterostylis constricta* Sargent, *Caladenia douthiae* Sargent, *Actinotus superbus* Sargent, *Helipterum cryptanthum* Sargent, *Hemiandra rubriflora* Sargent, *Hemiandra coccinea* Sargent, *Hemiandra gardneri* Sargent, *Hemiandra rutilans* Sargent, *Drosera stricticaulis* Sargent, *Pterostylis sargenti* Andrews, *Thelymitra sargenti* Rogers, *Eucalyptus sargenti* Maiden.

Papers by O. H. Sargent:—

Orchids Occurring in York, *Journal of the West Australian Natural History Society*, no. 3, August 1906, pp. 11-12.

The Pollination of *Caladenia Barbarossae*, *Journal of the West Australian Natural History Society*, no. 4, September 1907, pp. 6-12.

A New *Pterostylis*, *Journal of the West Australian Natural History Society*, no. 4, September 1907, pp. 24-25.

- Biological Notes on *Acaecia celsastrifolia*, *Journal of the West Australian Natural History Society*, no. 6, February 1909, pp. 34-44.
- Systematic Notes on Orchidaceae, *Journal of the West Australian Natural History Society*, no. 6, February 1909, pp. 64-67.
- Notes on the Life-History of *Pterostylis*, *Annals of Botany*, vol. 23, no. 90, April 1909, pp. 265-274.
- The Flower Biology of *Marianthus lineatus*, *Journal of the Natural History and Science Society of Western Australia*, vol. 3, no. 1, June 1910, pp. 58-65.
- Drosera macrantha* and *D. stricticaulis*, *Journal of Botany*, vol. 51, February 1913, pp. 33-42.
- A Westralian Form of the Orchid *Prasophyllum australe*, *Victorian Naturalist*, vol. 30, no. 5, September 1913, pp. 86-88.
- Fragments of the Flower Biology of Westralian Plants, *Annals of Botany*, vol. 32, no. 126, April 1918, pp. 215-231.
- A New Caladenia from West Australia, *Journal of Botany*, vol. 59, June 1921, pp. 175-176.
- Notes on West Australian Plants, *Journal of Botany*, vol. 61, November 1923, pp. 285-287.
- Notes on the Genus *Hemianandra* R.Br., *Journal of Botany*, June 1927, pp. 174-176.
- Reactions between Birds and Plants, *The Emu*, vol. 27, pt. 3, January 1928, pp. 185-192.
- Xerophytes and Xerophily, with Special Reference to Protead Distribution. *Proceedings of the Linnean Society of New South Wales*, vol. 55, December 15, 1930, pp. 577-586.

—RICA ERICKSON.

FROM FIELD AND STUDY

Occurrence of Black-tailed Godwit in Kalgoorlie.—A party of five Black-tailed Godwits (*Limosa limosa*) was observed on a dam in Kalgoorlie on December 21, 1952. They were identified by the white wing stripe and rump, and the long legs, trailed in flight. A loud squeak, like that of an immature White-headed Stilt, was emitted prior to flight. Unfortunately, at least three of the birds were destroyed and left floating in the dam. This enabled a photograph to be taken, and measurement of the tarsus, 67 mm. One bird remained on the dam and was still there when I left Kalgoorlie on February 5, 1953.

—P. SLATER, Coonana.

Early Appearance of Jewel Beetle.—The beautiful green jewel beetle, *Stigmodera gratiosa* Chevrol. (*W.A. Nat.*, vol. 3, 1952, p. 145, col. pl.), commonly found on flowers of *Hakea*, *Leptospermum*, etc., first appears in early September and early October. This year (1953) a specimen was collected alive and sent to the Museum at least over two months before it usually appears free.

Master Andrew Clarke found this jewel beetle on July 5 at Lesmurdie, and it arrived at the Museum in a very active condition next day. This is our earliest record of jewel beetles being found free in the South-west. Of course individuals may be cut out of their host trees and shrubs while they await satisfactory